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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,185	11/16/2001	Lee Kirby Jameson	17,090A	8720

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EXAMINER	
LIANG, LEONARD S	

ART UNIT	PAPER NUMBER
2853	

DATE MAILED: 11/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application N .	Applicant(s)	
	09/991,185	JAMESON ET AL.	
	Examiner	Art Unit	
	Leonard S Liang	2853	AW

-- The MAILING DATE f this communication appears on the cover sheet with the c rrespondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 August 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

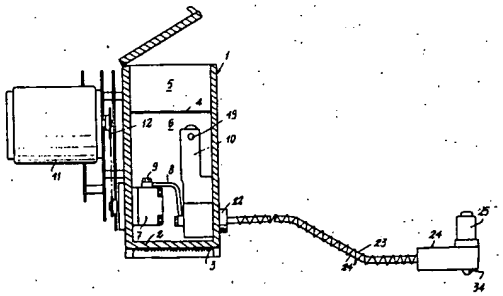
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6, 11-20, and 22-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Busoni (US Pat 3853410).

Busoni discloses:

- {claim 1} A drop on demand ink jet apparatus for the discrete and registered placement of non-ink chemistry on a substrate (figure 1; abstract); at least one solenoid valve designed to emit a single droplet of a non-ink chemistry on a substrate during each opening of the solenoid valve, the solenoid valve containing an orifice (figure 1, reference 25; column 2, line 14; column 3); at least one non-ink chemistry source, in communication with the at least one valve, and capable of communicating at least one non-ink chemistry to the solenoid valve (column 1, lines 1-39); a heating element (column 1, lines 1-39); wherein the heating element is positioned proximate to at least one chemistry, and wherein the heating element allows the apparatus to process phase-change materials (column 1, lines 1-39)



- {claim 2} a control means adapted to operate the at least one solenoid valve; wherein the control means is in communication means is in communication with the at least one solenoid valve (column 2, lines 12-15; column 3)
- {claim 3} the at least one chemistry source is selected from a reservoir or a continuous feed system (figure 1, reference 1)
- {claim 4} the at least one solenoid valve is controlled so as to discharge the at least one chemistries in a pattern (abstract; column 2, lines 12-15; column 3)
- {claim 5} a manifold plate and wherein the at least one valve is positioned in the manifold plate (figure 1, reference 4; serves as manifold plate)
- {claim 6} the at least one chemistry is passed through the manifold to at least one solenoid valve and is deposited on the substrate to provide topography on the substrate (column 1-3)
- {claim 11} the pressure source maintains adequate pressure in the apparatus so as to assist in the regulation of the chemistry discharge from the at least one orifice (figure 1, reference 7)
- {claim 12} the temperature sensor measures the temperature of the at least one chemistry in the apparatus (column 1, lines 4-31)
- {claim 13} the control means is capable of operation in multiple modes (abstract; column 1-3)
- {claim 14} the apparatus can apply the non-ink chemistry to a substrate so as to create a topography of chemistry and the non-ink chemistry is selected from the group consisting of topical applications (abstract; column 1, lines 4-31)
- {claim 15} A drop on demand printing device for the registered placement of non-ink phase-change liquids (figure 1; abstract); at least one solenoid valve designed to emit a non-ink chemistry on a substrate during each opening of the solenoid valve, the solenoid valve having a discharge orifice (figure 1, reference 25; column 2, line 14; column 3); a heating element, the element being capable of providing heat to the device so as to allow the utilization of non-ink phase-change liquids (column 1, lines 1-39); a non-ink chemistry supply, the supply

being in fluid communication with at least one solenoid valve (column 1, lines 1-39); a control means, adapted to operate with the at least one solenoid valve (column 2, lines 12-15; column 3)

- {claim 16} the chemistry supply is a reservoir or a feed system (figure 1, reference 1)
- {claim 17} the valve projects from the orifice droplets of chemistry, containing, at least in part, one or more phase-change liquids (abstract)
- {claim 18} the valve projects discrete segments of droplets of chemistry, containing, at least in part, one or more phase-change liquids (abstract)
- {claim 19} A method of placing one or more non-ink chemistries in a discrete and registered fashion (figure 1; abstract); providing a valve jet, the jet comprising: at least one solenoid valve, the valve containing an orifice; at least one non-ink chemistry source, the at least one non-ink chemistry source in communication with the at least one valve, and the at least one non-ink chemistry source is capable of communicating at least one non-ink chemistry to at least one solenoid valve; and a heating element; wherein the heating element is positioned proximate to at least one non-ink chemistry, and wherein the heating element allows the apparatus to process phase-change non-ink chemistries (abstract; figure 1, reference 25; column 1-3); providing an amount of non-ink chemistry (abstract); communicating the non-ink chemistry from at least one non-ink chemistry source to at least one solenoid valve (abstract; figure 1, reference 25; column 2, lines 12-15; column 3); providing heat to at least one non-ink chemistry (column 1, lines 1-39); discharging at least one non-ink chemistry from at least one solenoid valve in a pattern (column 2, lines 12-15; column 3)
- {claim 20} providing a substrate; wherein the discharged chemistry forms discrete segments on the substrate (abstract)
- {claim 22} the solenoid valve further comprise a discharge orifice (figure 1, reference 24; column 2, line 14)

- {claim 23} discharging the chemistry from the at least one solenoid valve comprises firing one or more of the at least one valves (column 2, lines 14; column 3)
- {claim 24} regulating the discharge of the chemistry from the at least one solenoid valves; wherein the valve jet further comprises a control element; wherein the control element is in communication with the at least one solenoid valves; and wherein the control element regulates the solenoid valves such that the chemistry is discharged onto the substrate in a pattern (column 2, lines 12-15; column 3)
- {claim 25} the control element provides for real-time adjustment of the discharge from the at least one solenoid valve (figure 2; column 2, lines 48-67)
- {claim 26} the discrete segments have a substantially semicircular cross-section extending above the substrate (figure 1, reference 34; inherent due to gravity)
- {claim 27} the at least one chemistry is selected from topical applications (abstract; column 1, lines 4-31)
- {claim 28} at least one chemistry is a phase-change material (abstract)
- {claim 29} the substrate is selected from a film, woven, nonwoven, paper and laminates and combinations thereof (column 1, lines 4-31)
- {claim 30} the discrete segments are applied to the substrate so as to create bond points (column 1, lines 4-31)
- {claim 31} the discrete segments bond points are interfacial bond points (column 1, lines 4-31)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole

would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 7 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Busoni (US Pat 3853410) in view of Heindel et al (US Pat 5342647).

Busoni discloses:

- {claim 7} the apparatus discharges discrete segments of chemistry (abstract)
- {claim 21} the chemistry is applied in one application to a substrate so as to create a topography of chemistry on the substrate (abstract)

Busoni differs from the claimed invention in that it does not disclose:

- {claim 7} provide enhanced fluid handling characteristics or skin separation to the substrate
- {claim 21} provide the substrate with enhanced fluid handling characteristics and/or skin separation

Heindel et al discloses:

- {claim 7} provide enhanced fluid handling characteristics or skin separation to the substrate (column 1, lines 8-32; when applied to disposable absorbent articles such as diapers)
- {claim 21} provide the substrate with enhanced fluid handling characteristics and/or skin separation (column 1, lines 8-32; when applied to disposable absorbent articles such as diapers)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Heindel et al into the teachings of Busoni. The motivation for the skilled artisan in doing so is to gain the benefit of more effectively assembling diapers and other disposable absorbent articles with better fluid handling characteristics.

3. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Busoni (US Pat 3853410) in view of Heindel et al (US Pat 5342647), as applied to claim 7, and further in view of Sasaki (US Pat 6296811).

Busoni differs from the claimed invention in that it does not disclose:

- {claim 8} the discrete segments have a volume of between about 5 nanoliters and about 400 nanoliters

Sasaki discloses:

- {claim 8} the discrete segments have a volume of between about 5 nanoliters and about 400 nanoliters (column 5, lines 51-67)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Sasaki into the invention of modified Busoni. The motivation for the skilled artisan in doing so is to gain the benefit of controlling the dispensing of small volumes of fluid (column 1, lines 5-6).

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Busoni (US Pat 3853410) in view of Heindel et al (US Pat 5342647), as applied to claim 7, and further in view of Cross et al (US Pat 4378564).

Busoni differs from the claimed invention in that it does not disclose:

- {claim 9} the discrete segments have a length and width less than about 2 mm and greater than about 0.2 mm

Cross et al discloses:

- {claim 9} the discrete segments have a length and width less than about 2 mm and greater than about 0.2 mm (column 2, lines 8-10; nozzle orifices determine segment size)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Cross et al into the teachings of modified Busoni. The motivation for the skilled artisan in doing so is to gain the benefit of discharging small discrete segments which do not use up too great a quantity of ink.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Busoni (US Pat 3853410) in view of Heindel et al (US Pat 5342647), as applied to claim 7, and further in view of Yaegashi et al (US Pat 5270730).

Busoni differs from the claimed invention in that it does not disclose that the discharged segments are discharged at a frequency between about 1 Hz and about 2 kHz.

Yaegashi discloses, with respect to claim 10, that the discharged segments are discharged at a frequency between about 1 Hz and about 2 kHz (column 12, lines 38-39).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Yaegashi et al into the invention of modified Busoni so that the discharged segments are discharged at a frequency between about 1 Hz and about 2 kHz. The motivation for the skilled artisan in doing so is to gain the benefit of properly ejecting a normal solid recording material (column 1, lines 10-16).

6. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Busoni (US Pat 3853410) in view of Ball (US Pat 4684956).

Busoni discloses, with respect to claim 32, a method (as taught in claim 19).

Busoni differs from the claimed invention in that it does not disclose that the viscosity of the at least one chemistry discharged from the valve jet is between about 1 centipoise and about 300 centipoise at the time of discharge.

Ball discloses, with respect to claim 32, that the viscosity of the at least one chemistry discharged from the valve jet is between about 1 centipoise and about 300 centipoise at the time of discharge (column 7, lines 18-25).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Ball into the invention of Busoni so that the viscosity of the at least one chemistry discharged from the valve jet is between about 1 centipoise and about 300 centipoise at the time of discharge. The motivation for the skilled artisan in doing so is to gain the benefit of properly operating a non-contact ink jet printing apparatus to apply a composition to a moving substrate as a series of discrete droplets (column 7, lines 18-25).

7. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Busoni (US Pat 3853410) in view of Sasaki (US Pat 6296811).

Busoni discloses, with respect to claim 33, a method (as applied to claim 20)

Busoni differs from the claimed invention in that it does not disclose:

- {claim 8} the discrete segments have a volume of between about 5 nanoliters and about 400 nanoliters

Sasaki discloses:

- {claim 8} the discrete segments have a volume of between about 5 nanoliters and about 400 nanoliters (column 5, lines 51-67)

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate the teachings of Sasaki into the invention of Busoni. The motivation for the skilled artisan in doing so is to gain the benefit of controlling the dispensing of small volumes of fluid (column 1, lines 5-6).

Response to Arguments

8. Applicant's arguments with respect to claims 1-33 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonard S Liang whose telephone number is (703) 305-4754. The examiner can normally be reached on 8:30-5 Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (703) 308-4896. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

lsl LSL

LAMSON NGUYEN
PRIMARY EXAMINER
11/16/03